

IN THE CLAIMS

Please cancel claims 1, 4, 5, 7, 8, 10, 15-19, 26 and 28-35 without prejudice or disclaimer as to their subject matter and amend claims 2 and 27 and newly add claims 36 and 37 by this amendment as follows:

2. (Amended) An ink-jet printhead, comprising:

a substrate being a single integrated monolithic and homogenous unit of silicon, said substrate, having a rear surface, said rear surface having a channel having a predetermined depth, wherein a plurality of ink feed holes are formed on a bottom of the channel perforating said substrate;

a nozzle plate coupled to a front surface of the substrate, said nozzle plate being perforated by a plurality of chamber-orifice complex holes, wherein each chamber-orifice complex hole corresponds to at least one of said plurality ink feed holes; and

a plurality of heaters disposed on the front surface of the substrate, each one of said plurality of heaters being located near corresponding ones of said plurality of chamber-orifice complex holes, wherein each one of said plurality of ink feed holes is formed at a center portion of a corresponding one of said plurality of chamber-orifice complex holes, and each one of said plurality of heaters surrounds corresponding ones of said plurality of ink feed holes.

27. (Amended) An ink-jet printhead, comprising:

a substrate being a single integrated monolithic and homogenous unit of silicon, said substrate, having a rear surface, said rear surface having a channel having a predetermined depth,

wherein a plurality of ink feed holes are formed on a bottom of the channel perforating said substrate;

a nozzle plate coupled to a front surface of the substrate, said nozzle plate being perforated by a plurality of chamber-orifice complex holes, wherein each chamber-orifice complex hole corresponds to at least one of said plurality ink feed holes; and

a plurality of heaters disposed on the front surface of the substrate, each one of said plurality of heaters being located near corresponding ones of said plurality of chamber-orifice complex holes,

said ink-jet printhead being manufactured by a process geared for mass production, said process comprising the steps of:

etching said channel into a rear surface of said substrate;

etching a plurality of holes through to said front surface of said substrate to perforate said substrate;

depositing a first plurality of signal lines and a second plurality of signal lines on said front surface of said substrate, each one of said first plurality of signal lines terminating near termination points of corresponding ones of said second plurality of signal lines, each of said terminating portions of said first and said second signal lines terminating near at least one of said plurality of holes perforating said front surface of said substrate;

depositing said heaters made of a resistive material onto said front surface of said substrate so as to said connect terminating ends of each one of said first plurality of signal lines with corresponding terminating ends of said second plurality of signal lines, said resistive

25 material being near to at least one of said plurality of holes perforating said front surface of said
26 substrate; and

27 attaching said nozzle plate perforated by said plurality of nozzle holes onto said front
28 surface of said substrate so that each one of said plurality of nozzle holes is aligned to
29 corresponding ones of terminating ends of said first and said second signal lines, said resistive
30 material, and at least one of said plurality of holes perforating said front surface of said substrate,
31 said resistive material being essentially omega in shape and surrounding corresponding ones of
32 said plurality of holes perforating said front surface of said substrate.

--36. The ink-jet printhead of claim 2, said nozzle plate being a single integrated
2 monolithic and homogenous unit, each chamber-orifice hole having a cylindrical shaped portion
4 on a side of said nozzle plate where said nozzle plate attaches to said front surface of said
5 substrate and a conical shaped portion on a side of said nozzle plate opposite from where said
nozzle plate attaches to said front surface of said substrate.

1 37. The ink-jet printhead of claim 36, said cylindrical shaped portion of each chamber-
2 orifice hole being perpendicular to said front surface of said substrate.--